

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
FIELD OPERATIONS - BUREAU OF AIR QUALITY

COMPLIANCE PERMIT

In accordance with provisions of the Air Pollution Control Act, the act of January 8, 1960, P.L. 2119, as amended, and after due consideration of an application received under Chapter 127 of the rules and regulations of the Department of Environmental Protection, the Department hereby issues this permit for the operation of the *Major NOx Emitting Facility AND Major VOC Emitting Facility* described below.

Permit No.	<u>CP-09-0005</u>	Major Emitting Facility for	<u>NOx and VOC</u>
Owner	<u>3M Company</u>	Related Plan Approvals	<u>PA-09-0005</u>
Address	<u>PO Box 119</u> <u>Green Lane</u> <u>Bristol, PA 19007</u>	RACT Proposal	<u>Control NOx from Combustion Units and Control VOC from Adhesive Formulation Process, 129.51 Equivalency, ERCs</u>
Attention	<u>Terry Easler</u> <u>Plant Manager</u>	Location	<u>2201 Green Lane</u> <u>Bristol</u> <u>Bucks County</u>

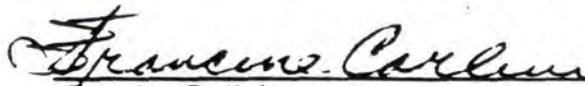
This permit is subject to the following conditions:

1. That the source(s) and any associated air cleaning devices are to be:
 - a. operated in such a manner as not to cause air pollution;
 - b. in compliance with the specifications and conditions of any applicable plan approvals and operating permits; and
 - c. operated and maintained in a manner consistent with good operating and maintenance practices.
2. This permit is valid only for the specific equipment, location and owner described above. This permit is valid for a period of 5 years for all sources listed in this operating permit *except those sources listed in plan approval No. PA-09-0005. Upon completion and demonstration described in plan approval PA-09-0005, the company shall apply for a revised operating permit.*

(SEE ADDITIONAL CONDITIONS ATTACHED)

Violation of this or any other provision of Article III of the rules and regulations of the Department of Environmental Protection will result in suspension or revocation of this permit and/or prosecution under Section 9 of the Air Pollution Control Act.

Issued 08/08/1996


Francine Carlini
Regional Manager
Air Quality

Expires 08/08/2001

cc: Central Office
Administration
SEFO
Re (KAL)38.6

COMPLIANCE PERMIT CONDITIONS
PERMIT NO. CP-09-C305
3M COMPANY

CONDITIONS (CONTINUED):

3. The permittee shall complete implementation of reasonably available control technology (RACT) according to the following schedule:

RACT Implementation Schedule:

The company shall install a new charge hatch door, new gaskets on charge hatch and sample hatch doors, and a vapor condensing system with closed-loop chiller system as specified in condition 4 of the Plan Approval No. PA-09-0005 no later than February 28, 1997, on each blender in compounding area Rooms 2 and 3 of Building 9.

4. This permit is issued for the purpose of authorizing operation of the source(s) between May 31, 1995 and the date by which implementation and operation of RACT shall be completed under paragraph 3, above.
5. This permit does not authorize the construction or modification of any source. ~~Construction or modification of a source is subject to the Plan Approval requirements of 25 Pa. Code Chapter 127 Subchapter B. Except as provided below, this permit does not modify in any way the terms and conditions of any existing or subsequent plan approval or operating permit issued for the sources that are the subject of this permit.~~
6. In the event that the permittee is prevented from complying in a ~~timely manner~~ with any interim time limit imposed in this permit solely because of a ~~strike, fire, flood, act of God, or other~~ circumstances entirely beyond the permittee's control and which permittee, by the exercise of all reasonable diligence, is ~~unable to prevent, or mitigate,~~ then the permittee may request an ~~extension of time from the Department.~~

The permittee shall only be entitled to the benefits of this paragraph if it notifies the Department within five (5) days by telephone and within ten (10) days in writing ~~of the date it becomes aware or reasonably should have become aware of the event impeding performance.~~ The written submission shall include related documentation, as well as a notarized affidavit from a responsible corporate official ~~specifying the reasons for the delay, and the efforts which have been made and are being made by the permittee to minimize the length of the delay.~~ The permittee's ~~failure to comply with the requirements of this paragraph specifically and in a timely fashion shall render this paragraph null and of no effect as to the particular incident involved.~~

7. If the permittee fails to achieve compliance ~~by the final compliance date described in paragraph 3 above,~~ this permit shall ~~be terminated for the sources listed in paragraph 3 above.~~

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CONDITIONS (CONTINUED):

8. For non-complying operation of all 3 blenders in compounding area Rooms 2 and 3 of Building 9 between June 1, 1996 and February 28, 1997, 3M shall pay a civil penalty calculated using the following equation:

$$[\text{actual VOC emissions (tons/month)}] [\text{\$180.00/ton}] = \text{penalty amount due per month of operation}$$

The penalty shall be paid monthly within 15 days of the end of each month for the preceding month's operations. The payment shall be made by corporate check or the like made payable to the "Commonwealth of Pennsylvania - Clean Air Fund" and sent to the Air Quality Compliance Specialist, Department of Environmental Protection, Bureau of Air Quality, Lee Park, Suite 6010, 555 North Lane, Conshohocken, PA 19428. Each payment shall be accompanied by form number ER-AQ-3, a copy of which is enclosed, and by 3M's record used to determine actual VOC emissions for the month.

9. The Compliance Permit No. CP-09-0005 is issued to 3M Company (3M) for the operation of Volatile Organic Compound (VOC)/Nitrogen Oxides (NOx) emission sources regulated under 25 Pa. Code §§ 129.91-95. This permit specifies the company's Reasonably Available Control Technology (RACT) requirements for Sources of VOCs and Oxides of Nitrogen. ~~This compliance permit is also for the purpose of establishing VOC emission reduction credits ("ERC") generated from permanently shutdown sources.~~
10. One purpose of the permit is to establish VOC and NOx RACT for 3M's Bristol facility to reduce emissions of VOC and NOx. This permit covers the following sources located at Green Lane, Bristol Township, Bucks County for which a RACT determination has been made:

VOC Emission Sources:

- Compounding Operations
- Cold Cleaning Parts Washers of less than 10 sq. ft opening area
- De-minimis sources

NOx Emission Sources:

Boilers	Manufacturer	Model	Rated Capacity MMBtu/hr	Fuel
Boiler No. 2	Springfield	Series #4979	<50	NG/#6 Oil
Boiler No. 3	Cleaver Brooks	DL76	<50	NG/#6 Oil

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CONDITIONS (CONTINUED):

Other NOx Emitting Sources:

Sources and Locations	Manufacturer	Model	Capacity MMBtu/hr	Fuel
Building 3 Boiler	H.B. Smith Co.	G210-S-8	0.262	Natural Gas
Building 30 Boiler	Weil-McLain	ABG-786F	1.703	Natural Gas
Building 29 Two (2) Heaters	National Heater Co., Inc.	RA-22	1.6632 (each)	Natural Gas
Building 36 Heater	Trane	GPA 303000A	0.3	Natural Gas
Building 36 Two (2) Inert Gas Generators	Kemp	DCV-20-System	2.4633 (each)	Natural Gas

11. Compounding Operations

A. Source Description

<u>POINT SOURCES</u>	<u>RATED CAPACITY</u>
Room 2 - 5W Adhesive Formulation	
• Room 2N Blender	5000 gal
• Room 2S Blender	5000 gal
Room 3 - 5W Adhesive Formulation	
• Room 3S Blender	5000 gal
Room 6 - Fire Barrier Caulk Production	
• Mogul	600 gal
Room 9 - 5W Yarn Sealer Production	
• S.W. Mixer	1600 gal
Room 13 - Precoat and Adhesive Production	
• 4 Churns	3 - 800 gal each 1 - 600 gal

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CONDITIONS (CONTINUED):

POINT SOURCES

RATED CAPACITY

Room 17 - Sealant Production

- **Mogul**

500 gal

FUGITIVE EMISSIONS

Area Emissions from compounding process occur during raw material charging, mixing and transfer operations. VOC emissions from the manufacturing process are generated during formulation of solvent-based coatings and are limited to compounding areas in Buildings 9, 7 and 14.

B. Control Technology

To control VOC emissions from the compounding operations in room 2 and 3 each blender shall be equipped with the following:

1. New charge and sample hatches with gasketed doors.
2. A vapor condensing system with a chiller to increase recovery efficiency of the system. The vapor condensing system covered under this permit consists of two (2) condensers, compressor, fan, and closed-loop chiller system.

C. Emission Limitations

VOC emissions from the point sources in aggregate with fugitive emissions shall be limited to the following maximum:

<u>Room</u>	<u>Product Manufactured</u>	<u>Production Equipment</u>	<u>VOC Emission lb VOC/hr</u>	<u>Limits tons/yr</u>
2	Adhesive	2 blenders	5.3	23.2
3	Adhesive	1 blender	5.3	23.2
6	Caulk	1 mogul	1.0	4.4
9	Adhesive	1 mixer	3.0	13.1
13	Precoat/Adhesive	4 churns	8.1	35.5
17	Sealant	1 mogul	5.4	23.7
TOTAL			28.1	122.9

The hourly emission limits are based on 24-hour average emission rate.

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CONDITIONS (CONTINUED):

D. Operating and Monitoring Requirements

1. Solvent content in a finished coating shall not deviate from its composition.
2. The Company shall limit the amount of solvent used per production batch to the following maximums:

Room	Product Manufactured	Production Equipment	Production Limit %w VOC
2	Adhesive	2 blenders	<80.0% solvent/batch
3	Adhesive	1 blender	<80.0% solvent/batch
6	Caulk	1 mogul	<37.0% solvent/batch
9	Adhesive	1 mixer	<62.0% solvent/batch
13	Precoat/Adhesive	4 churns	<98.5% solvent/batch
17	Sealant	1 mogul	<22.0% solvent/batch

Room 17 mogul shall never exceed 200 gal. of solvent during cleanup mode.

3. The amount of solvent added during production run shall be logged. 3M quality control (QC) methods shall be used to verify compliance with condition 11.D.1 and 2.
4. Solvent vapors from each blender shall be directed through its condensing system prior to discharge to the atmosphere.
5. Recovery efficiency of the condensing system shall be a minimum of 90 %.
6. Gas temperature from the condenser outlet shall be maintained at less than 40°F to verify performance of the condensing system. A continuous temperature recorder shall be installed at the gas outlet of each condenser for temperature detection and monitoring.
7. Differential pressure gages shall be installed on the fan and compressor to monitor air flow through the condensing system of each blender.

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CONDITIONS (CONTINUED):

8. The company shall initiate a preventative corrective and routine maintenance program to ensure the integrity of the condensing system. A preventative and routine maintenance schedule shall be developed for the following components and submitted to the Department: compressor, fan, valves, in-line filter, pressure gages and condenser cleaning. Adequate spare parts shall be retained for easy replacement.

E. Reporting and Recordkeeping Requirements

1. The company shall generate and maintain the following daily records:
- a. Maximum gas temperature from room 2 and 3 condenser outlets per batch to demonstrate compliance with condition 11.D.6.
 - b. Pressure differential across vent filter and fan of each condensing system to demonstrate compliance with condition 11.D.7.
 - c. Pressure differential across diaphragm of air compressor to demonstrate compliance with condition 11.D.7.
2. At the end of each batch, the percentage solvent by weight shall be determined using 3M QC methods and recorded to demonstrate compliance with condition 11.D.1 and 2 .
3. The company shall generate and maintain records of the following operational parameters:
- Product formulated
 - Pounds of solvent per batch (lbs/batch) per production run
 - Quantity of solvent additions during production run (lbs/per batch)
 - Batch frequency
 - Duration of each run (time/run)
4. The company shall establish a VOC emission tracking system for the compounding operations. This tracking system shall document compliance with short and long term emission limits required in condition 11.C of this permit. The tracking system to be finalized at the time of final permit issuance must be approved by the Department.

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CONDITIONS (CONTINUED):

5. The company shall produce an annual report of the VOC emission summary generated from the tracking system. The report shall detail maximum hourly VOC emissions averaged over the batch time and total tons of VOC emitted per calendar year per source and shall be made available to the Department upon request.
6. 3M shall generate records of maintenance performed on the condensing system.
7. Records required under this permit shall be kept for a period of two (2) years and shall be made available to the Department upon request.

F. Testing Requirements

1. 3M shall perform a VOC emission stack test every three years for rooms 2, 3, 6, 9, 13 and 17 operations. The company shall perform the first emission stack tests by June 21, 1997 for rooms 6, 9, 13 and 17 operations. The company shall perform emission stack tests for room 2 and 3 blenders within 60 days of the units start-up after control while the aforementioned sources are operated at the maximum rated load capacity (4000 gal of solvent). The stack tests shall be performed in accordance with the provisions of Chapter 139 to demonstrate compliance with RACT emission limits specified in condition 11.C of this permit.
2. At least sixty (60) days prior to the test, the company shall submit to the Department for approval the procedures for the test and a sketch with dimensions indicating the location of sampling ports and other data to ensure collection of representative samples.
3. At least thirty (30) days prior to the test, the Regional Air Quality Manager shall be informed of the date and time of the test.
4. Within thirty (30) days after the source test, two copies of the complete test report, including all testing conditions, shall be submitted to the Regional Air Quality Manager for approval.

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CONDITIONS (CONTINUED):

12. Cold Cleaning Parts Washers

A. Sources consist of the following:

Unit	Volume (gallons)	Area of Opening (sq. ft.)	VOC Used
5W	60	8.0	Toluene
Room 9	25	4.0	Toluene
Room 17	14	2.5	Toluene
Building 1 Maintenance No. 1	24	4.0	Mineral Spirits
Building 1 Maintenance No. 2	24	4.0	Mineral Spirits
Building 2 Shop	27	3.6	Mineral Spirits
Building 7 Maintenance	24	4.0	Toluene

B. The units shall be equipped, operated, and maintained in the same manner as the requirements of 25 Pa. Code § 129.63 (a) (1) and (2).

C. The company shall limit VOC emissions from each source to the following maximums:

Unit	VOC Emission Limits (TPY)
5W	2.129
Room 9	0.946
Room 17	0.657
Building 1, Maintenance No. 1	1.051
Building 1, Maintenance No. 2	1.051
Building 2 Shop	0.946
Building 7 Maintenance	1.051
TOTAL	7.831

D. The company shall produce an annual report of the emission summary to demonstrate compliance with condition 12.C of this section.

E. Records required under this permit shall be kept for a period of two (2) years and shall be made available to the Department upon request.

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CONDITIONS (CONTINUED):

13. De-Minimis VOC Emission Sources

- A. Each of the individual groups of the following de-minimis sources shall be operated with VOC emission rates of no greater than 3 pounds per hour, 15 pounds per day and 2.7 tons per year, whichever is more stringent:

No. De-Minimis Source

1. **Water-based Caulk Compounding and Packaging (Room 5 Mogul, Room 10 Mogul, Ross Mixer, Douglass Line, Schwerdtel Line, and Room 14 Packaging)**
2. **Ball Mill (100 gallon mixing vessel)**
3. **Storage Tanks (400 gallon Tank A-106, 600 gallon Tank A-107, 275 gallon No. 2 fuel oil emergency tank)**
4. **Tanker unloading (north tank farm, solvent and oil unloading)**
5. **Berringer oven (oven used to clean adhesive filters)**
6. **6W hot oil system (hot oil system in which thermal oil has some volatility)**
7. **Spray booth for maintenance painting operation**
8. **Combustion sources (boilers No. 2 and 3 natural gas/res. oil, building 29 heaters No. 1 and No. 2-natural gas, Building 3 boiler natural gas, Building 30 boiler-natural gas, Building 36 heater-natural gas, two emergency generators- No. 2 oil and propane)**

- B. The sources shall be operated and maintained in accordance with good air pollution control practices.

- C. The company shall keep records to demonstrate compliance with condition 13 A

- D. Records required under this compliance permit shall be kept for a period of two (2) years and shall be made available to the Department upon request.

14. Operating Requirements for Boilers No. 2 and No. 3:

- A. The maximum fuel amount available to the burners on each of the boilers shall not exceed 333 gallons of No. 6 oil per hour or 47600 cubic foot of natural gas per hour, respectively.

- B. The heat input for these two boilers is defined as follows:

Heat input (firing natural gas) = the natural gas consumption rate (ft³/hr) x the heat content of natural gas (Btu/ ft³);

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Heat input (firing No. 6 oil) = the No. 6 fuel oil consumption rate(gal/hr) x the heat content of No. 6 oil (Btu/gal);

The heat input for each boiler shall not exceed 50 million Btu per hour.

- C. Gas meters and oil meters shall be installed and maintained on each of the fuel lines which supply fuels to the boilers, so that at the request of the Department the fuel flow rate can be measured and compliance with Conditions A and B of this section can be determined.
- D. The Company shall properly maintain the boilers by following the steps listed below:
1. The Company shall conduct an annual adjustment or tune-up on the combustion units. This adjustment shall include, but not limited to the following:
 - a. Inspection, adjustment, cleaning or replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.
 - b. Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NO_x and to the extent practicable minimize emissions of CO.
 - c. Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.
 2. The company shall record each adjustment conducted under the procedures in paragraph (1) in a permanently bound log book or other method approved by the Department. This log shall contain, at a minimum, the following information:
 - a. The date of the tuning procedure.
 - b. The name of the service company and technicians.
 - c. The final operating rate or load.
 - d. The final CO and NO_x emission rates.
 - e. The final excess oxygen rate.
 - f. Other information which may be required in the subsequent operation permit.

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CONDITIONS (CONTINUED):

E. These boilers are to be fired on natural gas or No. 6 fuel oil only. The sulfur content of the No. 6 oil fired in this boiler shall not, at any time, exceed 0.5% by weight.

F. Recordkeeping Requirements:

1. 3M shall maintain the following records for the fuels used in the boilers:

a. A certification from the fuel supplier of the type of fuel including the percent sulfur by weight;

b. A certification from the fuel supplier of the nitrogen content of the fuel;

c. The identification of the sampling method and sampling protocol.

2. 3M shall record the amount and the type of fuels used on each of the boilers on a daily basis.

3. 3M shall record the date, the starting and ending time of the operation of the boilers.

4. Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.

15. Operating Requirements for NO_x Sources Listed in Condition 10 of this Operating Permit:

A. The company shall maintain and operate the sources in accordance with manufacturers specifications.

B. These sources shall fire natural gas only.

Surface Coating Equivalency Provisions

16. This compliance permit supersedes all previous operating permits issued for the 5W and 6W surface coating lines.

17. A. Unless operating under the limitations of condition 19 below, 3M shall operate the 5W and 6W surface coating lines in compliance with a 2.92 pound VOC per gallon of coating minus water emission standard for each surface coating line. VOC emissions shall be determined on a daily basis.

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CONDITIONS (CONTINUED):

- B. Compliance with the 2.92 pound VOC per gallon of coating limitation shall be determined as the daily weighted average of all coatings applied on each coating line.
- 18. On any given month of the operation of the 5W surface coating line, the total overall control efficiency must not be less than 70%.
- 19. 3M may combine the 5W and 6W emission standards as an equivalent emission source under 25 Pa. Code Section 129.51(a) under the following conditions:
 - A. The 5W actual emissions as a daily weighted average of applied coating exceeds 2.92 pounds VOC per gallon of coating minus water.
 - B. The allowable emissions for the 5W and 6W surface coating lines shall be summed as a daily weighted average of all coatings applied that day.
 - C. The total allowable emissions from the combination of the 5W and 6W surface coating lines shall be reduced by 20% to obtain the final combined allowable VOC emission for the combination of both coating lines that day.
- 20. Equivalency Recordkeeping and Reporting Requirements:
 - A. 3M shall determine actual and allowable emissions for the 5W and 6W surface coating lines on a daily basis.
 - B. The allowable VOC emissions for the 5W and 6W coating lines shall be determined by a daily weighted average of solids applied on each coating line and an emission limitation of 4.84 pounds VOC per gallon of solids applied. (that is, 4.84 pounds VOC per gallon of solids equates to 2.92 pounds VOC per gallon of coating using a 7.36 pound per gallon solvent.)
 - C. 5W solvent recovery efficiency shall be determined by meter readings which provide the monthly gallons of recovered solvent. The monthly gallons of solvent input shall be determined from production records. The monthly solvent recovery efficiency shall be used to determine daily actual emissions.
 - D. 5W daily actual emissions shall be based on the previous month's average 5W solvent recovery efficiency and daily production records.
 - E. 6W daily actual emissions shall be based on daily production records.
 - F. All records referred to in the above conditions shall be kept for a period of two years and will be made available at the Department's request.

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CONDITIONS (CONTINUED):

21. Facility Emission Reduction Credits (ERC)

3M is entitled to an ERC of 641.9 tons of VOC per year for the permanent shutdown of the following VOC emission sources in 1991: Coater Nos. 1E, 2E, 3E, 4E, 5E, 3W, and 4W. The ERC shall be available upon issuance of this permit under the terms of 25 Pa. Code Section 127.207. 3M shall not reactivate these coaters unless it applies for and receives a plan approval which meets the requirements of the Department's Rules and Regulations including 25 Pa. Code Chapter 127, Subchapter E.

22. General Requirements

- A. The expiration date shown on the permit is for State purposes. For Federal enforcement purposes, the permit shall remain in effect as part of the State Implementation Plan until replaced pursuant to 40 CFR 51 and approved by the U.S. Environmental Protection Agency.
- B. Revision to any emission limitations incorporated in this permit will require re-submission as revision to the PA State Implementation Plan. The applicant shall bear the cost of public hearing and notification required for EPA approval as stipulated in 25 Pa. Code §129.91 (h).
- C. The company shall not impose conditions upon or otherwise restrict the Department's access to the aforementioned source and/or any associated air cleaning device(s) and shall allow the Department to have access at any time to said source and associated air cleaning device(s) with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act.

(KAL)38.7